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REMARKS

The present Amendment is intended to be fully responsive to all points of objection and/or rejection raised by the Examiner and is believed to place the application in condition for allowance. Applicants assert that the present invention is new, non-obvious and useful. Prompt consideration and allowance of the claims are respectfully requested.

Status of Claims

Claims 1-18 are pending in the application.

Claims 14-16 have been allowed.

Claims 1-13, 17, and 18 have been rejected.

Claims 1, 2, 4, 7, 11, 17, 18 have been amended herein. Such amendments are variously intended to more clearly define what Applicants regard to be the invention, clarify the scope of the claims, correct typographical errors, or erroneous claim dependencies. It is respectfully submitted that no new matter is added, and that these amendments are not made for purposes of patentability over prior art or any other rejection set forth in the Office Action.

Claim 3 has been cancelled without prejudice to resubmission at a later date in this or a continuing application.

New claims 19-20 have been added in order to further define what the Applicants consider to be the invention. Applicants respectfully assert that no new matter has been added.

Applicants respectfully assert that the amendments to the pending claims and the new claims add no new matter.

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Allowable Subject Matter

Applicants are grateful to the Examiner for indicating the allowability of claims 14-16.

CLAIM REJECTIONS

35 U.S.C. § 112 Rejections

In the Office Action, the Examiner rejected claim 2 under 35 U.S.C. § 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as their invention, because the phrase "said planar light circuit terminates said optical channel" was considered vague.

Claim 2 has been amended to recite that the trench in the planar light circuit terminates the optical channel. It is respectfully submitted that in light of the clarifying amendment, the rejection of claim 2 under 35 U.S.C. § 112 is moot.

It is respectfully asserted that the foregoing amendment merely addresses matters of form and does not change the literal scope of the claim in any way or result in any prosecution history estoppel.

Applicants respectfully assert that amended claim 2 is proper under 35 U.S.C. § 112 and request that the rejections be withdrawn.

35 U.S.C. § 102 Rejections

The Examiner rejected claims 1-3 under 35 U.S.C. § 102(b), as being anticipated by Hirataka et al. (EP0723171). The Examiner contended that Hirataka discloses an optical module having an optical channel, a trench in the circuit for interrupting the optical channel, and a detection unit disposed in the trench for detecting optical signals in the channel. The Office Action further states that the detection unit includes a support submount including metal electrodes and solder bumps. Applicants respectfully traverse these rejections in view of the remarks that follow.

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Applicants have amended the claims to more clearly define the claimed subject matter. The following remarks relate to the specific rejections cited by the Examiner in as much as such rejections are applicable to the amended claims. Applicants respectfully assert that as shown below, the rejection is traversed with respect to the amended claims.

It is well-established that a rejection under 35 U.S.C. § 102 is only properly made if the reference discloses each and every element of a claim. Applicants respectfully submits that Hirataka does not disclose each and every element of amended independent claim 1. Specifically, Hirataka does not disclose, at least, "a support submount attached to said planar light circuit", or any structure that can be reasonably be construed to anticipate such element of amended claim 1. Moreover, and consequently, Hirataka also does not disclose "a detection unit disposed on said support submount to detect optical signals in said optical channel," or any configuration that can reasonably be construed to anticipate such configuration as recited in amended claim 1. Rather, Hirataka describes a photodiode and a planar light circuit; and there is no teaching of Hirataka of a support submount or similar element attached to the planar light circuit

According to the disclosure of Hirataka, "a recess is formed in a semiconductor substrate in the position in which an optical semiconductor element on the substrate is fixedly joined to thereby be able to fixedly join the optical semiconductor element in a desired position without adjustment." (Col. 3 lines 5-9) (emphasis added). See, e.g., Fig. 1B, showing optical element attached to the planar light circuit by attachment to the recess.

In view of the above, it is respectfully submitted that amended claim 1 is not anticipated by Hirataka. Furthermore, it is respectfully submitted that amended independent claim 1 is patentable over Hirataka, alone or in combination with any other prior art reference. The Hirataka reference and other prior art cited by the Examiner teach attaching the detection unit directly to the planar light circuit, thereby teaching away from including a support submount and attaching the detection unit to said submount.

The Examiner further rejected claims 1-8, 10, 11, 17 and 18 under 35 U.S.C. § 102(b), as being anticipated by Yamamoto et al. (EP0807981). The Examiner has contended that the Yamamoto reference discloses an optical module comprising a planar light circuit having optical channels, a trench formed in the planar light circuit for interrupting the optical

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channels and a detection unit with photodiodes disposed in the trench for detecting optical signals in the channels. The Office Action further states that the detection unit is mounted on a support transparent substrate by solder bumps and electrodes including a common electrode. Applicants respectfully traverse these rejections in view of the remarks that follow.

Applicants have amended the claims to more clearly define the claimed subject matter. The following remarks relate to the specific rejections cited by the Examiner in as much as such rejections are applicable to the amended claims. Applicants respectfully assert that as shown below, the rejection is traversed with respect to the amended claims.

It is well-established that a rejection under 35 U.S.C. § 102 is only properly made if the reference discloses each and every element of a claim. Applicants respectfully submits that Yamamoto does not disclose each and every element of amended independent claim 1. Specifically, Yamamoto does not disclose, at least, "a support submount attached to said planar light circuit", or any structure that can be reasonably be construed to anticipate such element of amended claim 1. Moreover, and consequently, Yamamoto also does not disclose "a detection unit disposed on said support submount to detect optical signals in said optical channel," or any configuration that can reasonably be construed to anticipate such configuration as recited in amended claim 1. Rather, Yamamoto states that "the optical module 301 includes the optical waveguide 13 on the support substrate 1 and further a photoreception device 401 is mounted directly on the support substrate." (col. 18 lines 7-11) (emphasis added); see also, e.g., Fig. 4A, showing photoreception device attached directly to planar light circuit.

In view of the above, it is respectfully submitted that amended claim 1 is not anticipated by Yamamoto. Furthermore, it is respectfully submitted that amended independent claim 1 is patentable over Yamamoto, alone or in combination with any other prior art reference. The Yamamoto reference and other prior art cited by the Examiner teach attaching the detection unit directly to the planar light circuit, thereby teaching away from including a support submount and attaching the detection unit to said submount.

Likewise, with respect to independent method claim 17, Applicants respectfully traverse the rejection. As discussed above, Yamamoto does not teach or disclose a support

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submount for a detection unit. Specifically, Yamamoto does not disclose at least the method elements of "providing a support submount," "mounting a detection unit on the support submount," or "placing the support submount on the planar light circuit using flip-chip mounting." Accordingly, Yamamoto does not perform, either expressly or inherently, all elements of claim 17. Therefore, claim 17 and its dependent claim 18, are patentable over Yamamoto.

Accordingly, based at least on the above, Applicants respectfully assert that independent claims 1 and 17 are allowable. Moreover, claims 2, 4-8, 10, 11, 17 and 18, which depend directly or indirectly therefrom, are likewise allowable. Accordingly, Applicants respectfully request that the Examiner withdraw the rejections to the pending claims.

35 U.S.C. § 103 Rejections

In the Office Action, the Examiner rejected claims 9, 12 and 13 under 35 U.S.C. § 103(a), as being unpatentable over Yamamoto (EP0706981). Applicants respectfully traverse the rejection because a prima facie case of obviousness has not been established vis-à-vis amended claim 1. A prima facie case obviousness rejection must at least show the express or inherent presence of each and every element of a claim in the prior art. Without conceding to the propriety of the Examiner's argument for obviousness, which failed to refer to a specific reference from the art, by which the Examiner modified the teachings of the Yamamoto reference, or the lack of motivation to do so, Applicants respectfully assert that the cited prior art does not contain each and every element of claim 1.

In view of the foregoing remarks and arguments, it is respectfully asserted that the cited prior art fails to teach or otherwise render obvious all elements of independent claim 1, and specifically "a support submount attached to said planar light circuit", or "a detection unit disposed on said support submount to detect optical signals in said optical channel."

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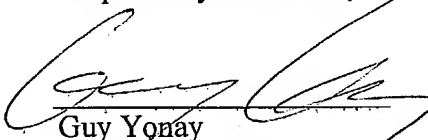
In view of the non-obviousness of independent claim 1, dependent claims 9, 12, and 13, which depend directly or indirectly therefrom, should likewise be allowed.

In view of the foregoing amendments and remarks, the pending claims are deemed to be allowable. Their favorable reconsideration and allowance is respectfully requested.

Should the Examiner have any question or comment as to the form, content or entry of this Amendment, the Examiner is requested to contact the undersigned at the telephone number below. Similarly, if there are any further issues yet to be resolved to advance the prosecution of this application to issue, the Examiner is requested to telephone the undersigned counsel.

Please charge any fees associated with this paper to deposit account No. 05-0649.

Respectfully submitted,


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Dated: November 19, 2003

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